NORTHWEST POWER POOL

Reliability through Cooperation

2013

NORTHWEST POWER POOL

Cooperation

Mission

The Northwest Power Pool Corporate mission is to support electric reliability through cooperation

Vision

Helping the Northwest Power Pool members work together to maintain a reliable and secure interconnection – today and in the future

Values

- Member Driven
- Relationship Based
- Independent
- Respect
- Integrity
- Trust
- Competence

Work Environment

- We support each other and create “safe” environment
- Team concept
- Merit-based compensation is satisfactory, i.e., comparable to industry
- Openness
- Trust
- Respect
- Integrity
- Quality of work – pride in doing a good job
- Job Security – to do the right thing at the right time

History

- First pooling of resources occurred in1917 in the Northwest
- NWPP formed in 1941 by 6 investor-owned utilities
  - 3 staff engineers
- An impetus from the War Production Board in 1942
  - Ten major private utility systems and Bonneville Power Administration
  - Pooled resources to provide power to the war industries
- Maintained after WWII for reliability and coordination

NORTHWEST PowerPool

Chronology

1941 – Operating Committee (OR, WA, MT, UT, ID)
1942 – BPA joined (superpool)
1949 – British Columbia Hydro & Power Authority joined
1961 – Columbia River Treaty with Canada
1964 – Pacific Northwest Coordination Agreement (PNCA) signed – Coordinating Group
1970 – Contingency Reserve Sharing
1990 – Transmission Planning Committee
1995 – Formalized Membership Agreement
1997 – New PNCA
1999 – NWPP Incorporated as a non-profit corporation
2002 – Automation of the Contingency Reserve Sharing –AGC driven, 20 Balancing Authorities
2005 – NERC Certified Trainer
2008 – Agreement Appointing Agent and Establishing Responsibilities Related to Reserve Sharing Group Compliance with BAL-002
2008 – General Services Agreement

Northwest Power Pool Corporation

- Non profit corporation
- Nine full-time positions
- Primary focus on the NWPP members and their requirements

NWPP Corporation as Agent

- Compliance Report and Record Keeping
- Compliance Self-Certifications
- Respond to Enforcement Authority
  - Notice
  - Audit
  - Investigation
- Maintain and update Policies and Procedures

NWPP Corporation as Agent

- Determine Group Compliance Matter
  - Operational Noncompliance Event
    - Identify and proportion responsibility
  - Administrative Noncompliance Event
    - Acts or omission of one or more
      - *Identify and proportion responsibility*
    - Group Issue
      - *Apply formula*
  - Report to Enforcement Authority
    - Identify and proportion responsibility

NWPP Corporation Training

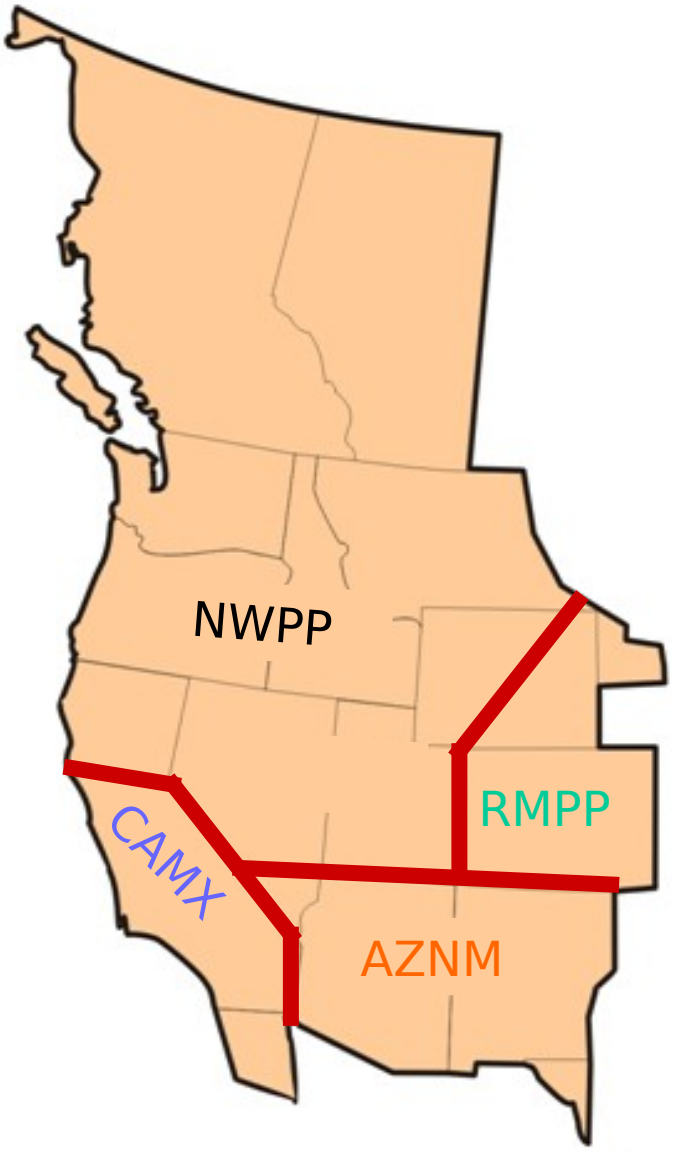
- NWPP is a NERC qualified provider of continuing education hours
- Courses
  - Reserve Sharing (4 CEH)
  - Energy Emergency Plan (1CEH)
  - Underfrequency Load Shedding (2 CEH)
  - Time Error Control (1 CEH)
  - Frequency Response (1 CEH)
  - Voltage Issues (2 CEH)
  - Reserve Sharing simulation (1CEH)

NORTHWEST PowerPool

NORTHWEST POWER POOL

Membership

NERC/WECC BAs by Sub-regions



Northwest Power Pool (NWPP RSG)
Alberta Electric System Operator
Avista Corporation
Bonneville Power Administration
British Columbia Hydro Association
Chelan County PUD
Douglas County PUD
Grant County PUD
Idaho Power Company
NaturEner Power Watch – Wind Energy
Northwestern Energy
PacifiCorp-East
PacifiCorp-West
Portland General Electric Company
Puget Sound Energy
Sacramento Municipal Utility Board
Seattle City Light
Sierra Pacific Power Company
Tacoma Power
Turlock Irrigation District
Western Area Power Administration – UGP

Rocky Mountain Power Pool (RMRG)
Public Service Company of Colorado
Western Area Power Administration – CM

Arizona-New Mexico (SRSG)
Arizona Public Service Company
CECD – Arlington Valley
CECD – Griffith
CECD – Harquahala
CECD – Panda Gila River
El Paso Electric Company
Imperial Irrigation District
Nevada Power Company
Public Service Company of New Mexico
Salt River Project
Tucson Electric Power Company
Western Area Power Administration – LCR

California-Mexico
California Independent System Operator
Comision Federal de Electricidad
Los Angeles Dept. of Water and Power

Demographics in NWPP Electrical/Geographic Area

- 8 U.S. States
- 2 Canadian Provinces
- Federal, Public, Private, Provincial Ownership
- International Border (Treaties associated with water)
- Non-Jurisdictional as well as Jurisdictional
- Preference Act – Public Law 88-552
- 160 Consumer-owned electric utilities
- 20 Control Areas (37 in the Western Interconnection (WI)).
- ~ 90,000 Megawatts Total Resources (44% WI)
- ~ 50% Peak load of the WI
- ~ 50% Energy load of the WI
- Automated Reserve Sharing Procedures
- Hydro Coordination
- Hydro Thermal Integration
  - *Hydro located on the West (BC, ID, OR, WA)*
  - *Thermal located on the East (AB, MT, NV, UT, WY)*

NORTHWEST PowerPool

Participant's Vision

The Northwest Power Pool Membership Agreement serves as a forum for reliability and operational adequacy issues in the area for both transmission and generation.

Four Main Membership Committees

- Operating Committee
  - Foster coordination and communication.
- Coordinating Group
  - Administer the Pacific Northwest Coordination Agreement, optimizing Columbia Basin hydro generation.
- Transmission Planning Committee
  - Provide a forum for reliable transmission planning.
- Reserve Sharing Committee
  - Administer and address Contingency Reserve.

Operating Committee

- Adequacy Assessments - to assess the NWPP ability to meet and sustain load demands at all times including extreme load conditions as a result of weather or loss of generation
- Under-frequency Load Shedding - to arrest frequency decline in the event of a contingency such as severe generation/load imbalance.

Operating Committee

- Outage Coordination - to coordinate the schedule of transmission outages enhancing system reliability and reducing the number of hours under constrained conditions
- Emergency Response Team - the ability to respond to current reliability issues such as extreme temperature conditions creating extreme load

Operating Committee

- Next Day Operating Studies
  - Curtailment studies are performed by the individual path operators based on the outage schedule developed through the COS process.
  - COS process – studies are performed at least 15 days prior to the outage
  - Includes all facilities 100 KV or greater
  - Includes all generators 50 MVA or greater

Other OC Services

- NERC
  - Active participation
  - Coordinated information, discussions, interpretations and responses
- WECC
  - Coordinated discussions concerning new criterion, interpretations and responses

PNCA Coordination

- Critical Period Planning: That period in the historical water record that meets the least amount of firm load
- Previously the Critical Period was 4 years, but now 7 months
- Output of planning process are operating curves for reservoirs and FELCCs the systems

Coordinated Reservoir Operations

- Actual Energy Regulation
  - FELCCs and curves from the planning process
  - Actual and estimated streamflows
- Proportional draft
- Energy in lieu of water
- Provisional energy

Transmission Planning Committee

- Serve as a Forum for open discussion
- Sub-Regional Studies to identify
  - Transmission options within a Sub-Region
  - Multi Subregional Studies (requested by governmental agencies)
  - Connections to Regional Transmission
  - Parities with similar interests and goals – local stakeholder involvement
  - Local costs and reliability benefits
- Assist in Regional Transmission Dispute Resolution Process
- Collection and coordination of TPC members' data including submittals to WECC
- Subregional collection and coordination for the NWPP area for WECC submittals
- Develop guidelines for assessing the reliability and efficient development of the transmission system in the NWPP area

NORTHWEST PowerPool

Reserve Sharing Committee

- Contingency Reserve Sharing to provide 60-minute recovery assistance on a “flow base”
  - Concept – one very large area operating as a single BA for contingency reserve

NORTHWEST PowerPool

Transmission Planning Committee and Operating Committee

- Northwest Operational Planning Study Group (NOPSG)
  - Closed process (OC and TPC members)
  - Seasonal path operating studies
- UFLS studies
- Seasonal Assessments
  - Summer and Winter
  - Long-Term Resource Assessments

Transmission Planning Committee and Operating Committee

- Long-term Significant Outage Planning (LTSOP)
  - Share outage information with all parties affected by outages of significant equipment (i.e., equipment that affects the transfer capability of rated paths). Information is shared two times each year for a minimum of a six-month period. The first meeting each year coordinates outages for July through December. The second meeting coordinates outages for January through June.
  - Review the outage schedules to insure that needed outages can be reliably accomplished with minimal impact on critical transmission use.
  - Outage coordinators are to post the outages on the Coordinated Outages System within the applicable timeframes.

Transmission Planning Committee and Operating Committee

- Local Load Voltage Protection
  - Facilitate the process to comply with the WECC criteria and guidelines as applicable.
  - Participate in studies determining minimum requirements for compliance with the criteria and guidelines when more than one Transmission Operator is involved.
  - Develop and publish final reports
  - Complete the necessary documentation and provide copies all involved entities.

Transmission Planning Committee and Operating Committee

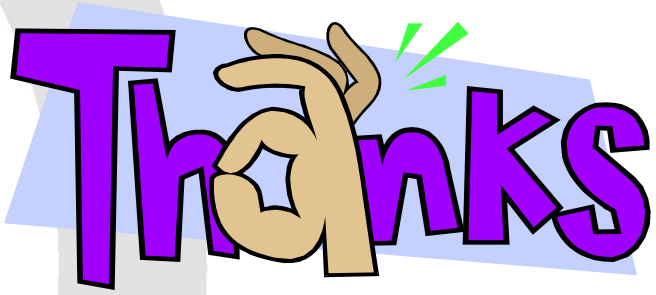
- Under Frequency Load Shedding Process
  - Facilitate the process to comply with the NERC Reliability Standard and WECC criteria and guidelines as applicable.
  - Participate in studies determining minimum requirements for compliance with the criteria and guidelines for the NWPP Area
  - Develop and publish final reports
  - Complete the necessary documentation and provide copies all involved entities.

QUESTIONS?

NORTHWEST PowerPool

Northwest Power Pool Corporation

- www.nwpp.org



NORTHWEST PowerPool